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THE EFFECT OF MEMBERSHIP HOMOGENEITY ON GROUP SIZE, FUNDS MOBILIZATION, AND THE ENGENDERMENT OF RECIPROCAL OBLIGATIONS AMONG INFORMAL FINANCIAL GROUPS IN RURAL ZAIRE

by

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Abstract

The hypothesis that informal financial groups (IFGs) in Zaire are relatively homogeneous in terms of gender, occupation, and geographical proximity. A simultaneous equations model of IFGs, corrected for heteroscedasticity, was estimated. Membership homogeneity is significant in explaining variations in the characteristics of the organizational form of IFGs--size of membership, amount of funds mobilized, and engenderment of reciprocal obligations.

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Introduction

Informal finance in low-income countries has received increasing attention in recent years. The evidence from Africa--Cameroon, Gambia, Ghana, Niger, Somalia, and Zimbabwe--indicates vigorous and extensive savings activities in informal financial markets. In Cameroon, for example, it has been estimated that informal financial groups (IFGs) provide 27 percent of total credit to the financial sector, and account for more than one-half of total financial savings (Schrieder and Cuevas). Recent studies (Garson and Sonsola; Cuevas et al) have provided evidence of an active and highly monetized informal financial market in Zaire.

Of the various forms of informal financial intermediaries identified in Zaire, IFGs play the most important role in mobilizing funds, and in providing credit and depository services to rural households. Each village has several IFGs, each of which mobilizes, on average, between 250 thousand and three million zaires (Z) ($500 to $6,000 U.S. dollars) a year. This represents about Z 30 thousand ($60 U.S. dollars) per group member, an amount equivalent to about 15 percent of gross household income (Cuevas et al).

Rotating saving and credit associations (ROSCAs) are a common type of IFG found in Zaire. Members of ROSCAs make regular contributions to a fund which is then given,

in whole or in part, to each member in rotation (Ardender). The typical ROSCA consists of an organizer and a number of voluntary members. The rotation is determined by various means which include bidding and drawing of lots. Other criteria, such as seniority, are also considered. When the rotation is completed, the group may continue for another cycle unchanged, commence the rotation with changes in membership, or disband. The collection and disbursement of the contributions which make up the fund may occur daily, bi-weekly, monthly, or with some other agreed-upon frequency.

In addition to ROSCAs, one finds in Zaire another type of IFG, the savings groups. Schrieder defines a savings group as "an association where a core of participants agree to save regularly on a contractual basis. The savings might be used for member and/or non-member loans on a interest-earning or interest-free basis" (Schrieder, pp.60). The essential difference in the services provided by ROSCAs and savings groups is that the joint financial services of borrowing and saving do not occur simultaneously in savings groups.

The importance and persistence of IFGs in Zaire and countries throughout the world, both developed and developing, have led many people to conclude that IFGs can serve as a project design standard to improve the operation of rural financial markets. Along this line, an idea that is gaining attention and being more extensively promoted by non-government organizations and other development agencies is the "linkage" approach of Seibel. Seibel proposes that banks could expand rural lending by offering loans to groups organized in, or as, ROSCAs, or to existing ROSCAs.

An attractive feature of group lending is that it reduces the risk of default through joint liability. However, the point that is so often missed is that joint liability, in itself, is

not sufficient reason for members in a group not to default. Group formation is not a simple process, and clearly requires a great deal of information on the members and potential members in a group. There is a need to understand the glue that keeps ROSCAs together before blindly adopting this particular organizational form. Further understanding of the dynamics of the group is necessary in any attempt at group lending, especially when the group is formed with the express purpose of obtaining loans from a formal financial institution. This point cannot be overstated. The extension of credit will change the nature of an IFG. "Hence, use of informal financial intermediaries as conduits of donor funds should be gauged very carefully against the possible damage to the roots of the system these linkages can entail" (Cuevas, p.12).

This paper explores the hypothesis that IFGs in Zaire are customized to their membership, their needs and their distinctive attributes. Specifically, IFGs are relatively homogeneous in terms of gender, occupation, and geographical proximity. Membership homogeneity is significant in explaining variations in the characteristics of the organizational form of IFGs--size of membership, amount of funds mobilized, and engenderment of reciprocal obligations.

Risk Management

IFGs reduce transaction costs through risk management. Risk is managed by gathering information about the membership and through enforcement procedures. This contributes towards reducing the costs associated with moral hazard and adverse selection.

In this research, information is proxied by gender composition of the membership,

occupational composition of the membership, geographical proximity of the membership and the number of years the IFG has been in existence. Homogeneity in membership with respect to gender, occupation, and geographical location implies greater availability of information. So too does the number of years an IFG has been in existence: the longer its life, the greater the amount and accuracy of information. The greater the information set, the greater is the level of trust and confidence within the membership that all contracts will be honored, thus lowering the transaction costs associated with sorting out moral hazard and adverse selection.

The size of membership is a means of risk management. The smaller the membership of the IFG, the greater is the accuracy and reliability of information, in part because the ability to assimilate it is limited. A member may know only a few other members well. As membership grows, information on other members may be collected from members in the IFG not well known to any particular member. The use of this "secondary" information may eventually lead to a loss of trust and confidence in the IFG.

The value of information is higher in ROSCAs than in savings groups because of the contractual differences. ROSCAs require that each member trusts other members because the funds mobilized for each member depend upon other members fulfilling their obligations. In savings groups, members have an obligation to themselves to contribute to their own fund, at least with respect to the funds mobilized.

Size of Membership

Close to 60 percent of IFGs had a membership of ten members or fewer, ROSCAs being generally smaller in size than savings groups (see Table 1). In fact, 75 percent of ROSCAs are of this size. Furthermore, nearly 40 percent of all ROSCAs had five or fewer members. The average membership size for all ROSCAs was 12 members, with a range of between two and 650. Bouman states that the classic ROSCA consists of not more than approximately 30 members (1989). The data for Zaire supports this conclusion.

Table I: SIZE OF MEMBERSHIP BY TYPE OF IFG

Size of Membership	Type of Group					
	ROSCA		Savings Group		Total	
	N	%	N	%	N	%
0-5 Members	27	43.5	2	7.5	29	32.5
6-10 Members	19	30.5	4	15.0	23	26.0
11-20 Members	11	18.0	6	22.0	17	19.0
Greater than 20 Members	5	8.0	15	55.5	20	22.5
Total	62	100.0	27	100.0	89	100.0

Source: OSU/SEP Survey, 1989.

In contrast, 85 percent of all savings groups have more than ten members. Over half of all savings groups have a membership exceeding 20 members. The average membership size for all savings groups is 58 members, with a range between five and 152 members.

There are a number of reasons for the differences in membership size between ROSCAs and savings groups: the operational objectives of the IFG, transaction costs, different informational needs, and income levels of members of the IFGs.

Gender Composition of the Membership

Single gender IFGs comprise 54 percent of all IFGs (see Table 2). This is almost equally divided between all male or all female IFGs. Single gender ROSCAs comprise 61 percent of all ROSCAs. All-female ROSCAs account for 37 percent of all ROSCAs.

IFGs that are heterogenous with respect to gender composition are generally male dominated. Over 60 percent of mixed gender IFGs have a male majority. More than 60 percent of savings groups are heterogeneous with respect to gender; for ROSCAs the equivalent figure is 41 percent. This suggests that there is a relationship between the type of IFG and its composition by gender.

In fact, in IFGs with a membership of 10 or less, 73 percent are either all men or all women, a finding that strongly suggests the existence of sharp differences between the sexes on the subject of money (see Table 3).

There are distinct differences in roles of men and women in the rural economy. For example, cassava production and sales are generally the domain of women as well as their major source of cash income; their contributions to IFGs depend heavily on this activity.

Table II: GENDER COMPOSITION OF THE MEMBERSHIP BY TYPE OF IFG

Gender Composition	Type of Group					
	ROSCA		Savings Group		Total	
	N	%	N	%	N	%
All Female	23	37.0	2	7.6	25	28.5
All Male	15	24.0	8	30.8	23	26.0
Mixed, Majority Female	7	11.5	8	30.8	15	17.0
Mixed, Majority Male	17	27.5	8	30.8	25	28.5
Total	62	100.0	26	100.0	88	100.0

Source: OSU/SEP Survey, 1989.

In general, because cassava can be harvested at any time, women are thought to enjoy a steadier flow of income than do men. Another interesting finding is that two-thirds of IFGs with a male majority have a membership that is three-quarters male. In comparison, only 40 percent of IFGs with a female majority are at least 75 percent female.

This sharp separation by gender is also an indication that the degree of trustworthiness is stronger among individuals of the same sex. It can also be argued that this represents social boundaries in money matters.

Table III: GENDER COMPOSITION OF IFGS BY SIZE OF MEMBERSHIP

Gender	Size of Membership				
	0-5 Members	6-10 Members	11-20 Members	>20 Members	Total
All Female	14	6	1	4	25
All Male	11	8	2	2	23
Mixed, Majority Female	2	2	5	6	15
Mixed, Majority Male	2	7	9	7	25
Total	29	23	17	19	88

Source: OSU/SEP Survey, 1989.

Length of Existence[1]

Sixty-four percent of all IFGs were formed after 1987 (see table 4). However, it is interesting to note the existence of IFGs prior to 1980. Over seventy percent of all ROSCAs were formed between 1988 and 1989 and one-half were formed during 1989. Savings groups appear more stable, one-half having been in existence since before 1988.

[1] The definition of a "new" IFG is rather subjective. There is the possibility of adding or losing members in ROSCAs after the completion of a rotation. Hence, the next rotation could be treated as a continuation of the previous ROSCA or as a "new" ROSCA.

Table IV: NUMBER OF YEARS AN IFG HAS EXISTED BY TYPE OF IFG

Number of Years	Type of Group					
	ROSCA		Savings Group		Total	
	N	%	N	%	N	%
One Year	31	51.5	5	18.5	36	41.5
Two Years	12	20.0	8	29.5	20	23.0
Three Years	6	10.0	1	3.5	7	8.0
Four-Five Years	3	5.0	4	15.0	7	8.0
>Five Years	8	13.5	9	33.5	17	19.5
Total	60	100.0	27	100.0	87	100.0

Source: OSU/SEP Survey, 1989.

The apparent instability of IFGs--65 percent of all IFGs were formed after 1987--is complicated by the finding that this apparent instability is primarily caused by the migration of members to other villages. There are only occasional cases of fraud or theft. Fraud and theft do not occur in IFGs to the extent imagined by many people, including the people who are now members of IFGs. In Bandundu, only ten percent of members who had previously participated in IFGs have withdrawn because of fraud or theft. In Shaba, migration was found to be as important a reason for the withdrawal of members as fraud or theft.

Every member of an IFG joins the group with certain objectives in mind. The apparent instability of IFGs may be attributed to the major objectives of its membership.

According to the leaders of IFGs, reciprocal obligations in the form of mutual aid is the benefit being sought most by members. As stated earlier, the engenderment of reciprocal obligations do not necessarily imply that all members will benefit equally at any particular time. It is logical to assume that reciprocal obligations become a longer lasting feature of relationships among the members than the main output provided by IFGs, though this assumption deserves further investigation. The very definition of reciprocal obligations implies that the relationship will in all likelihood be long lasting, beyond the lifespan of the IFG.

The length of time it takes to complete one rotation in an ROSCA is also important. With the average length of time to complete one rotation being approximately seven months, many ROSCAs may have completed at least three rotations in two years.

Geographical Proximity of the Membership

An important condition for membership in an IFG is residence in the village. In fact, the most commonly shared attribute of members, according to the leaders, is their place of residence (see Table 5). Only five of the 89 IFGs surveyed had members who lived in villages other than those of the IFGs' location. Supporting this finding is the fact that a majority of the IFGs surveyed have been founded by indigenous members of the local area.

Occupation of the Membership

An analysis of the occupations of members of IFGs reveals that IFGs are relatively homogenous with respect to occupation. IFGs have a membership that is homogenous in

Table V: COMMON BOND OF MEMBERSHIP BY TYPE OF IFG

	Type of Group					
	ROSCA		Savings Group		Total	
Common Bond	N	%	N	%	N	%
Community	27	43.5	6	23.0	33	37.5
Occupation	18	29.0	7	27.0	25	28.4
Ethniticity	8	13.0	4	15.5	12	13.6
Gender	4	6.5	0	0.0	4	4.6
Religion	0	0.0	5	19.0	5	5.7
Other	5	8.0	4	15.5	9	10.2
Total	62	100.0	26	100.0	88	100.0

Source: OSU/SEP Survey, 1989.

occupation in 43 of 76 groups. The percentage of ROSCAs whose members share the same occupation is similar to that in savings groups, 55 percent. In over three-quarters of all IFGs, at least 75 percent of the members have the same occupation. This suggests that there is a greater degree of trust and confidence among people of the same occupation.

In addition, the occupational homogeneity of the membership is of great benefit in making key organizational decisions. For example, different occupations impose different constraints on their members. Thus an IFG that is homogeneous by occupation will not have to deal with constraints that act against one another. Yet, the degree of occupational homogeneity also affects cash flows within the membership: when members are of the same occupation, they experience similar cash flows. Occupational homogeneity itself can be a

constraint in times when the membership is faced with a similar hardship i.e. a drought for a membership comprised of farmers.

The vast majority of IFGs have members engaged in farming. A greater percentage of IFGs, 30 percent, are comprised of women as compared to male farmers, 21 percent. A possible explanation is that women farmers grow cassava, which, given the fact that it can be harvested throughout the year, allows a more regular flow of income. Men, on the other hand, engage in farming cash crops that do not provide a regular flow of income.

Empirical Findings for All IFGs

Table 6 presents the estimates for the simultaneous equations model that describes the engenderment of reciprocal obligations, the size of membership, and the amount of funds mobilized for all IFGs. The overall effect of the exogenous variables is found in Table 7. Estimates for the simultaneous equations model, after substituting the ratio of women, and then men over total membership for the ratio of the dominant gender over total membership, is found in Tables 8 and 9 respectively.

The Engenderment of Reciprocal Obligations

The direct effects of information on the engenderment of reciprocal obligations were found to be significant for the proxy variables, dominant gender ratio and length of existence (see Table 6). Interestingly, the direct effect of the length of existence has a negative relationship with reciprocal obligations. The overall effect of the length of existence also has a negative relationship with the engenderment of reciprocal obligations (see Table 7).

One possible explanation for this is the evolving information set. The longer the IFG has existed, the stronger the bonds of trust and mutual confidence within it. Reciprocal obligations become a part of their relationship, one that no longer needs to be mandated by the IFG. Also, once reciprocal obligations in the form of mutual aid are provided within the IFG, reciprocal obligations do not depend on the continuing existence of the IFG.

The direct effect of the ratio of the dominant gender over total membership was found to be significant and had the expected sign in its relationship with the engenderment of reciprocal obligations. Reciprocal obligations are positively affected by homogeneous gender composition in IFGs. The overall impact of the ratio of the dominant gender over total membership on the engenderment of reciprocal obligations is also positive.

Table 8 presents the system of equations that is estimated by substituting the ratio of women over total membership for the dominant gender ratio in IFGs. In this case, the more homogenous the IFG is with respect to women, the more likely the IFG is to engender reciprocal obligations. The overall effect of the ratio of women over total membership is also positive. One implication of this finding is the important role women play in long-term financial planning. This may be attributable to social tradition in Zaire: here women's incomes belong more to their families than do men's incomes. It is also possible that men are less capable of establishing among themselves that degree of trust and confidence which must exist for reciprocal obligations to take place within an IFG.

Table VI: ESTIMATED PARAMETERS OF THE STRUCTURAL MODEL OF IFGS. GENDER REPRESENTED BY THE RATIO OF THE DOMINANT GENDER OVER TOTAL MEMBERS.

Explanatory Variables	Dependent Variables		
	Reciprocity	Membership Size	Fund Size
RECIPROCITY	na	-0.56**	-0.83***
		(0.29)	(0.54)
MEMBERSHIP SIZE	0.1	na	1.97*
	(0.14)		(0.64)
FUND SIZE	-0.0013***	1.15***	na
	(0.0001)	(0.70)	
INFORMATION			
--Gender	0.06***	-0.75**	2.02*
(Dominant)	(0.04)	(0.43)	(0.82)
--Years	-0.39***	0.25**	-0.44**
	(0.29)	(0.14)	(0.20)
--Occupation	-0.03	-0.02	-0.65***
	(0.03)	(0.25)	(0.34)
PROCEDURES			
--Frequency of	na	-0.79**	0.75*
Contribution		(0.39)	(0.29)
--Fixed vs	na	na	0.64***
Variable			(0.46)
Contribution			
--Emergency	1.94***	-0.32	na
Loans	(1.40)	(0.43)	
TRANSACTION COSTS			
--Collection	-0.06**	-0.11	-0.25***
and Distribution	(0.03)	(0.18)	(0.17)
--Regulatory	-0.01	0.02	-0.02
Activity	(0.01)	(0.02)	(0.02)
CONTROL VARIABLES			
--Type of	-1.50	-2.47**	2.28*
Group	(2.86)	(1.09)	(0.53)
--Income	-0.01E-06	-0.54***	0.2
	(0.17E-06)	(0.41)	(0.19)
--Region	-4.65***	na	na
	(3.48)		
INTERCEPT	6.15	4.28**	-4.79
	(8.1)	(2.41)	(4.11)
R-SQUARED	0.31	0.70	0.58

na=not applicable; * significant at 0.01; ** significant at 0.05; *** significant at 0.1; standard error in parentheses.

Table VII: PARAMETER ESTIMATES OF THE REDUCED FORM MODEL FOR ALL IFGS

EXPLANATORY VARIABLES	DEPENDENT VARIABLES		
	RECIPROCITY	MEMBERSHIP SIZE	FUND SIZE
INFORMATION			
Gender (Dominant)	0.01	-0.98	-0.07
Gender[1] (Male)	-0.03	0.03	0.05
Gender[2] (Female)	0.03	0.03	-0.03
Years	-0.64	0.10	-0.16
Occupation	-0.004	0.23	0.1
PROCEDURES			
Frequency of Contribution	-10.30	-0.23	0.47
Fixed vs Variable Contribution	12.12	-0.21	-0.1
Emergency Loans	6.54	0.21	0.49
TRANSACTION COSTS			
Collection and Distribution	-0.15	0.23	0.25
Regulatory Activity	-0.09	0.02	-0.0004
CONTROL VARIABLES			
Type of Group	-18.40	-0.58	1.48
Income	-0.19E-05	0.10	-0.16
Region	-5.54	-0.43	0.49
INTERCEPT	24.43	4.11	0.70

1 = ratio of women over total members.
2 = ratio of men over total members.

Table VIII: PARAMETER ESTIMATES OF THE STRUCTURAL MODEL OF IFGS. GENDER REPRESENTED BY THE RATIO OF WOMEN OVER TOTAL MEMBERS

Explanatory Variables	Dependent Variables		
	RECIPROCITY	MEMBERSHIP SIZE	FUND SIZE
RECIPROCITY	na	-0.72**	-1.54*
		(0.33	(0.54)
MEMBERSHIP SIZE	-0.06	na	2.5*
	(0.07)		(0.77)
FUND SIZE	-0.00015***	0.73	na
	(0.00011)	(0.66)	
INFORMATION			
--Gender	0.03***	0.05**	-0.09*
(Women)	(0.02)	(0.02)	(0.03)
--Years	-0.37	0.19	-0.55*
	(0.29)	(0.15)	(0.21)
--Occupation	-0.03	-0.07	-0.98*
	(0.03)	(0.25)	(0.36)
PROCEDURES			
--Frequency of	na	-0.50***	0.23
Contribution		(0.32)	(0.21)
--Fixed vs	na	na	1.80*
Variable			(0.57)
Contribution			
--Emergency	3.05**	-0.18	na
Loans	(1.67)	(0.44)	
TRANSACTION COSTS			
--Collection	-0.052***	-0.01	-0.48**
and	(0.03)	(0.17)	(0.21)
Distribution			
--Regulatory	-0.0049	0.02	-0.01
activity	(0.0054)	(0.02)	(0.02)
CONTROL VARIABLES			
--Type of Group	-4.74	-1.94**	2.26*
	(4.10)	(1.07)	(0.54)
--Income	0.2E-05	-0.24	-0.09
	(0.32E-05)	(0.36)	(0.22)
--Region	-7.47**	na	na
	(3.83)		
INTERCEPT	17.20**	0.89	7.95*
	(7.38)	(1.78)	(2.23)
R-SQUARED	0.30	0.67	0.65

na=not applicable; * significant at 0.01; ** significant at 0.05; *** significant at 0.1; standard error in parentheses.

Table IX: PARAMETER ESTIMATES OF THE STRUCTURAL MODEL OF IFGS. GENDER REPRESENTED BY THE RATIO OF MEN OVER TOTAL MEMBERS.

EXPLANATORY VARIABLES	DEPENDENT VARIABLES		
	RECIPROCITY	MEMBERSHIP SIZE	FUND SIZE
RECIPROCITY	na	-0.61**	-1.15*
		(0.34)	(0.41)
MEMBERSHIP SIZE	0.004	na	1.77*
	(0.07)		(0.61)
FUND SIZE	-0.0002**	0.81***	na
	(0.00009)	(0.52)	
INFORMATION			
--Gender	-0.02	-0.02	-0.014
(Men)	(0.18)	(0.02)	(0.02)
--Years	-0.49***	0.22***	-0.48*
	(0.31)	(0.15)	(0.18)
--Occupation	-0.03	-0.21	-0.62***
	(0.03)	(0.31)	(0.44)
PROCEDURES			
--Frequency of	na	-0.52**	0.42***
Contribution		(0.27)	(0.26)
--Fixed vs	na	na	1.1**
Variable			(0.45)
Contribution			
--Emergency	3.64**	-0.26	na
Loans	(1.76)	(0.41)	
TRANSACTION COSTS			
--Collection	-0.68**	0.04	-0.36**
and Distribu-	(0.032)	(0.12)	(0.20)
tion			
--Regulatory	-0.0043	0.02	-0.01
activity	(0.0058)	(0.02)	(0.02)
CONTROL VARIABLES			
--Type of Group	-3.11	-2.01**	1.73*
	(3.32)	(0.9)	(0.45)
--Income	0.29E-05	-0.3	0.13
	(0.31)	(0.26)	(0.2)
--Region	-7.35**	na	na
	(3.73)		
INTERCEPT	17.49**	1.42	5.79**
	(7.78)	(1.77)	(2.78)
R-SQUARED	0.30	0.66	0.55

na=not applicable; * significant at 0.01; ** significant at 0.05; *** significant at 0.1; standard error in parentheses.

Table 9 presents the system of equations estimated by substituting the ratio of men over total membership for the dominant gender ratio in IFGs. This variable shows a negative relationship with the engenderment of reciprocal obligations, but it is statistically insignificant. The overall effect of the ratio of men over total membership on the engenderment of reciprocal obligations, through the joint dependence of the endogenous variables in the structural model, has a negative sign.

The direct effect of the dominant occupational ratio on the engenderment of reciprocal obligations was found to be significant and negative in sign, contrary to our hypothesis. The overall effect of the dominant occupational ratio is also negative in sign. This is the opposite of what was hypothesized. A possible explanation is that IFGs made-up of members of the same occupation face the same time-related cash flow constraints. Thus, there is little difference in the timing of members' cash flows to help meet unexpected emergencies.

Size of Membership

Table 6 presents the results of the size of membership equation. The direct effect of the ratio of the dominant gender over total membership is significant, has a negative relationship with the size of membership, and is not of the expected sign. The more homogeneous an IFG is with respect to gender, the smaller the size of membership. Differences between the gender ratios may explain why the relationship between the ratio of the dominant gender over total membership and size of membership in IFGs is not as hypothesized.

Table 8 contrasts the substitution of the ratio of women over total membership in IFGs with the ratio of the dominant gender over total membership. The higher the ratio of women over total membership in the IFG, the larger will be the size of membership. The total effect of the ratio of women has the same sign. In Zaire, women appear to work easily together: IFGs with a female majority appear to engender a greater trust and confidence among their membership.

Table 9 presents the results of the size of membership equation by substituting the ratio of men over total membership for the ratio of the dominant gender over total membership. The estimated coefficient for the ratio of men over total membership in IFGs was found to be negative, but insignificant in explaining the size of the IFG.

The length of existence has a positive direct effect on the size of the IFG. The overall effect of the length of existence also has a positive relationship with the size of membership (see Table 7). The greater information set, available as a result of members' coexistence over a long period of time, would accommodate an increase in the size of membership without significantly changing the risk associated with the larger membership.

The direct effect of the dominant occupational ratio is insignificant in explaining variations in the size of membership, and has an unexpected sign. The total effect of the dominant occupational ratio has the expected sign: the greater the dominant occupational ratio, the greater the size of membership.

Amount of Funds Mobilized

Table 6 presents the results of the amount of funds mobilized equation. The information proxies were all significant. The direct effect of the ratio of the dominant gender over total membership is significant and has the expected relationship with the amount of funds mobilized: the more homogeneous the IFG is with respect to the dominant gender, the larger will be the amount of funds mobilized. Contrary to expectations, the total effect of the dominant gender ratio has a negative relationship with the amount of funds mobilized (see Table 7). The indirect effects outweigh the direct effect of the ratio of the dominant gender over total membership. Substituting the ratio of men over total membership, and the ratio of women over total membership for the dominant gender ratio may offer some clues to the overall relationship of gender to amount of funds mobilized.

Table 8 substitutes the ratio of women over total membership for the ratio of the dominant gender over total membership. The results show that the direct effect of the ratio of women over total membership on the amount of funds mobilized is negative. In other words, the greater the ratio of women over total membership, the smaller will be the amount of funds mobilized. In addition, the overall impact of the ratio of women on the size of funds mobilized is also negative. Thus, memberships whose composition is predominantly female affect the size of funds differently than do those dominated by males. This may possibly be due to the differences, in propensities for risk-taking, between men and women. Men in general tend to be less averse to taking risks than are women. The amount of funds to be mobilized is a means of managing risk. Moral hazard becomes more of an issue, the larger the amount of funds mobilized. By restricting the amount of funds mobi-

lized, the IFG reduces risk in the form of moral hazard. Thus men may be more willing to mobilize a larger fund size.

Table 9 presents the results of substituting the ratio of men over total membership for the ratio of the dominant gender over total membership in the amount of funds mobilized equation. The direct effect of the ratio of men over total membership was found to be insignificant in explaining variations in the amount of funds mobilized and had a neativ e sign. The total effect though indicates that the ratio of men over total membership has a positive relationship with the amount of funds mobilized. Surprisingly, the direct effect of the length of existence has a negative relationship with the amount of the funds mobilized. The total effect of the length of existence also has a negative sign. This may be attributed to the error in measurement of the length of existence variable.

The ratio of the dominant occupation is significant, but has an unexpected sign: the more homogeneous the memberships' occupation, the smaller the amount of the fund. The indirect effect as captured through the joint dependency of the endogenous variables outweighs the direct effect. Therefore, the total effect is of the expected sign.

Concluding Remarks

By managing risk, IFGs reduce transaction costs associated with moral hazard and adverse selection. Risk is managed by gathering information about potential members, and through enforcement procedures. The composition of an IFG's membership, a proxy for information, is relatively homogeneous with respect to gender, occupation, and geographical location. This homogeneity implies a greater availability of information. The greater the

information, the greater the level of trust and confidence within the membership that all contracts will be honored. The size of membership, and size of funds mobilized are also means of risk management.

In summary, IFGs are multi-functional, and reduce transaction costs through flexible operating procedures and risk management (Slover). The ability to adapt in order to cope with changing economic conditions, and to customize the IFG to fit the distinctive attributes of its membership make each IFG a unique organizational form.

The findings reported here underscore the informational advantages that IFGs enjoy as compared to formal financial institutions. These informational advantages of IFGs manifest themselves as lower transaction costs, evidenced by the terms and conditions of outputs and services. There are, however, insurmountable difficulties in adapting the organizational forms of IFGs to formal financial intermediaries, given the institutional structure of the latter.

Formal financial intermediaries could partially benefit from the IFGs' informational advantages through establishing financial relationships with informal groups. This integration between formal financial intermediaries and IFGs can be achieved by developing deposit instruments that meet the needs of informal groups, and through the provision of credit services to these groups.

Access to the financial services offered by the formal financial intermediary should strengthen IFGs by increasing and improving the quality of their financial services, and by providing them with depository services. Lending to IFGs, on the other hand, may have the

effect of lowering lending costs, and reducing the risk in the loan portfolios of formal financial institutions.

In any attempt to organize groups as ROSCAs, it is vitally important to foster group homogeneity in gender, occupation, and geographical proximity. In other words, special attention should be given to understanding what glues the group together.

Likewise, efforts to integrate existing IFGs with formal financial institutions will alter IFGs, and possibly threaten their integrity.

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